REMARKS

Reconsideration is requested.

Claims 1-16 and 65-71 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,260,078 to Fowlow in view of U.S. Patent No. 5,268,998 to Simpson.

Claims 17-64 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,268,998 to Simpson in view of U.S. Patent No. 6,260,078 to Fowlow.

These rejections are improper and should be withdrawn. Contrary to the Examiner's assertion, Fowlow does not teach or suggest a data visualization process, as that term is commonly used or is used in applicants' specification.

The Fowlow reference is non-analogous art and does not relate to the field of applicants' invention. Applicants' invention relates to visualizing the results of multiple queries to a search engine. It has nothing to do with acquiring data or code.

Fowlow relates to finding and downloading java-based applications. Though applicants' invention could be used to display results of web pages or documents such as .pdf files gathered from the Internet, applicants' invention is not at all about "acquiring" applets or documents or web pages.

The Simpson reference is also non-analogous art. The Simpson reference relates to a system which enables a user to visualize directly an object in 3-D Lobachevskian, 4-D Euclidean, or other geometries. An object is to provide a system for direct visualization of objects lying in alternative geometries. Applicants' invention does not relate to alternative geometries such as 3-D Lobachevskian, 4-D Euclidean geometries. On the contrary, applicants display data in 1-D or 2-D space, as will be described below.

It would not be obvious to combine Simpson with Fowlow because there is no teaching or suggestion of which part of Simpson should be selected and somehow combined with Fowlow. If Simpson were to be combined with Fowlow, using the primary teachings and objects of each, the result would perhaps be a system for downloading java based applications relating to imaging.

Therefore, the rejections of claims 1-16 and 65-71 as being unpatentable over U.S. Patent No. 6,260,078 to Fowlow in view of U.S. Patent No. 5,268,998 to Simpson and the rejections of claims 17-64 as being unpatentable over U.S. Patent No. 5,268,998 to Simpson in view of U.S. Patent No. 6,260,078 to Fowlow are improper and should be withdrawn.

Accompanying this amendment is an information disclosure statement citing art that was cited in the corresponding PCT application. The claims of this U.S. application have been amended in a manner similar to the manner in which they were amended in the corresponding PCT application.

Claim 1, as amended, recites that a ray is provided for each query object, and wherein displaying includes displaying a point representing a specific one of the items at a first position along one of the rays, which position indicates a determined relative relationship between the item and the ray's query object, and displaying a second point representing the same specific item at a second position along another one of the rays, which second position indicates a determined relative relationship between the item and the second ray's query object.

The term "ray," as defined by applicants' specification, refers to a geometric construct having an origin and a direction, and may correspond to a linear or non-linear

construct, such as a spiral, or which may be a directed region of space or volume, such as a half-plane or a curved planar surface.

Even if Simpson and Fowlow could be combined, the combination would fail to provide a ray for each query object, wherein displaying includes displaying a point representing a specific one of the items at a first position along one of the rays, which position indicates a determined relative relationship between the item and the ray's query object, and displaying a second point representing the same specific item at a second position along another one of the rays, which second position indicates a determined relative relationship between the item and the second ray's query object.

Therefore, claim 1 is allowable. As claims 2-16 depend on claim 1, they too are allowable.

Claim 17 recites that a ray is provided for each query object, and wherein displaying includes displaying a point representing a specific one of the items at a first position along one of the rays, which position indicates a determined relative relationship between the item and the ray's query object, and displaying a second point representing the same specific item at a second position along another one of the rays, which second position indicates a determined relative relationship between the item and the second ray's query object.

The references fail to teach or suggest a ray provided for each query object, and wherein displaying includes displaying a point representing a specific one of the items at a first position along one of the rays, which position indicates a determined relative relationship between the item and the ray's query object, and displaying a second point representing the same specific item at a second position along another one of the rays,

which second position indicates a determined relative relationship between the item and the second ray's query object.

Therefore, claim 17 is allowable. As claims 18-32 depend on claim 17, they too are allowable.

Claim 33 recites a computer-readable medium comprising computer usable code configured to cause digital processing circuitry to control an image device to depict points corresponding to data from a database along each of a plurality of rays, wherein positions of the displayed points correspond to relative relationships, wherein the computer usable code configured to display includes computer usable code configured to display at least a majority of the plurality of rays to have a common origin.

The references fail to teach or suggest displaying at least a majority of the plurality of rays to have a common origin.

Therefore, claim 33 is allowable. As claims 34, and 36-48 depend on claim 33, they too are allowable.

Claim 49 recites computer usable code configured to display includes computer usable code configured to display a plurality of rays to have a common origin, wherein the computer usable code configured to display includes computer usable code configured to display the plurality of rays as radiating outwardly from the common origin at equally-spaced angles from one another.

The references fail to teach or suggest a plurality of rays radiating outwardly from a common origin at equally-spaced angles from one another.

Therefore, claim 49 is allowable. As claims 50 and 53-64 depend on claim 49, they too are allowable.

Claim 65 recites displaying a point along each of a plurality of rays for each of the plurality of query objects, wherein positions of the displayed points correspond to the relative relationships between a respective one of the plurality of query objects and the body of data, wherein displaying includes placing a small graphic entity at an end of each of the plurality of rays to represent a respective one of the plurality of query objects, wherein displaying comprises displaying the plurality of rays to have a common origin and to radiate outwardly from the common origin at equally-spaced angles from one another; and determining a critical distance from the common origin, wherein points on the plurality of rays falling within the critical distance meet or exceed a relevancy threshold and points on the plurality of rays outside the critical distance do not meet the relevancy threshold.

The references fail to teach or suggest displaying a point along each of a plurality of rays for each of the plurality of query objects, wherein positions of the displayed points correspond to the relative relationships between a respective one of the plurality of query objects and the body of data, wherein displaying includes placing a small graphic entity at an end of each of the plurality of rays to represent a respective one of the plurality of query objects, wherein displaying comprises displaying the plurality of rays to have a common origin and to radiate outwardly from the common origin at equally-spaced angles from one another; and determining a critical distance from the common origin, wherein points on the plurality of rays falling within the critical distance meet or exceed a relevancy threshold and points on the plurality of rays outside the critical distance do not meet the relevancy threshold.

Therefore, claim 65 is allowable. As claims 67-68 and 71 depend on claim 65, they too are allowable.

In view of the forgoing, allowance of claims 1-34, 36-50, 53-65, 67-68 and 71 is requested. The undersigned is available for telephone consultation at any time.

Respectfully submitted,

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By: _____

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Application Serial No. 09/755,503
Filing Date ..... January 5, 2001
Inventor ..... Nancy E. Miller et al.
Assignee ..... Battelle Memorial Institute
Group Art Unit 2172
Examiner ..... Tam V. Nguyen
Attorney's Docket No. BA4-067
Title: Multi-Query Data Visualization Processes, Data Visualization Apparatus, Computer-Readable Media and Computer Data Signals Embodied in a Transmission Medium

VERSION WITH MARKINGS TO SHOW CHANGES MADE ACCOMPANYING RESPONSE TO JANUARY 29, 2003 OFFICE ACTION

In the Claims

The claims have been amended as follows. Underlines indicate insertions and ~~strikeouts~~ indicate deletions.

1. (Amended) A multi-query data visualization process comprising:

inputting a plurality of query objects into a data processing device;

identifying features within each of the plurality of query objects that allow comparison to items of a body of data stored in a database;

determining relative relationships between each of the plurality of query objects and the items of the body of data; and

displaying points along a plurality of rays, wherein a position of each of the displayed points corresponds to the determined relative relationship between each respective one of the plurality of query objects and the body of data, wherein a ray is provided for each query object, and wherein displaying includes displaying a point representing a specific one of the items at a first position along one of the rays, which position indicates a determined relative relationship between the item and the ray's query object, and displaying a second point representing the same specific item at a second position along another one of the rays, which second position indicates a determined relative relationship between the item and the second ray's query object.

17. (Amended) A data visualization apparatus comprising:

an image device configured to provide a visual image; and

digital processing circuitry coupled with the image device and configured to:

input a plurality of query objects;

identify features within each of the plurality of query objects that allow comparison to items of a body of data stored in a database;

determine relative relationships between each of the plurality of query objects and items of the body of data; and

control the image device to depict points corresponding to data from the database along each of a plurality of rays, wherein positions of the displayed points correspond to the relative relationships, wherein a ray is provided for each query object, and wherein displaying includes displaying a point representing a specific one of the items at a first position along one of the rays, which position indicates a determined relative relationship between the item and the ray's query object, and displaying a second point representing the same specific item at a second position along another one of the rays, which second position indicates a determined relative relationship between the item and the second ray's query object.

33. (Amended) A computer-readable medium comprising computer usable code configured to cause digital processing circuitry to:

identify features of each of a plurality of query objects that allow comparison to a body of data stored in a database;

determine relative relationships between each of the plurality of query objects and the body of data; and

control an image device to depict points corresponding to data from the database along each of a plurality of rays, wherein positions of the displayed points correspond to the relative relationships, wherein the computer usable code configured to display includes computer usable code configured to display at least a majority of the plurality of rays to have a common origin.

Claim 35 has been cancelled.

36. (Amended) The computer readable medium comprising computer usable code of claim 33 ~~35~~, wherein the computer usable code configured to display includes computer usable code configured to display the plurality of rays to radiate outwardly from the common origin at equally-spaced angles from one another.

37. (Amended) The computer readable medium comprising computer usable code of claim 33, ~~wherein the computer usable code configured to display includes computer usable code configured to display the plurality of rays to have a common origin~~ and further comprising computer usable code configured to determine a critical distance from the common origin, wherein points on the plurality of rays falling within the critical distance meet or exceed a relevancy threshold and points on the plurality of rays outside the critical distance do not meet the relevancy threshold.

49. (Amended) A computer data signal embodied in a transmission medium comprising computer usable code configured to:

input a plurality of query objects into a data processing device;

determine relative relationships between each of the plurality of query objects and a body of data stored in a database; and

control an image device to depict points corresponding to data from the database along each of a plurality of rays, wherein positions of the displayed points correspond to the relative relationships, wherein the computer usable code configured to display includes computer usable code configured to display the plurality of rays to have a common origin, and wherein the computer usable code configured to display includes computer usable code configured to display the plurality of rays as radiating outwardly from the common origin at equally-spaced angles from one another.

Claims 51-52 have been cancelled.

65. (Amended) A data visualization process comprising:

inputting a plurality of query objects into in a data processor;

determining relative relationships between each of the plurality of query objects and a body of data; ~~and~~

displaying a point along each of a plurality of rays for each of the plurality of query objects, wherein positions of the displayed points correspond to the relative relationships between a respective one of the plurality of query objects and the body of data, wherein displaying includes placing a small graphic entity at an end of each of the plurality of rays to represent a respective one of the plurality of query objects, wherein displaying comprises displaying the plurality of rays to have a common origin and to radiate outwardly from the common origin at equally-spaced angles from one another; and

determining a critical distance from the common origin, wherein points on the plurality of rays falling within the critical distance meet or exceed a relevancy threshold and points on the plurality of rays outside the critical distance do not meet the relevancy threshold.

Claim 66 has been cancelled.

Claims 69-70 have been cancelled.

71. (Amended) The process of claim 65 ~~69~~, further comprising determining a critical distance from the common origin, wherein points on the plurality of rays falling within the critical distance meet or exceed a relevancy threshold and points on the plurality of rays outside the critical distance do not meet the relevancy threshold.

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